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Research Paper

Information Communication Technologies in Tourism

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ABSTRACT

Tourism is travel for recreational, leisure or business purposes. Information and Communication Technologies (ICT) refers to technologies that provide access to information through telecommunications. Information Technology in tourism is of special significance. Electronic commerce can be defined as a secure exchange of information, products and services via computer networks. This article also explain Traditional value chains and internet based value chain. It will also explain framework for Information and Communication Technologies for tourism.

Keywords-Tourism, Information and Communication Technologies, Electronic commerce, framework.

Introduction

Tourism is a highly information-intensive industry, so information and communication technology (INFORMATION AND COMMUNICATION TECHNOLOGY) has a great impact on the tourism business. Tourism is travel for recreational, leisure or business purposes. The World Tourism Organization defines tourists as people "traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes.

Information and Communication Technologies (ICT) refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums.

Information and Communication Technology has a great impact in tourism industry, it enables direct communication with clients and improves efficiency and effectiveness of costumer service. At the same time Information and Communication Technology makes competition harder and demands continuous investments.Information and Communication Technology provides new tools and enables new distribution channels, creating also a new business environment e-tourism and requiring new skills. In this contribution the following two areas are heavily influenced by Information and Communication Technology : electronic commerce and revenue management.

Review of use of Information technology in Tourism:

Travel and tourism has not only become one of the world's largest industry but also grows consistently every year. Between 1990 and 2000, tourist arrivals worldwide grew at an average rate of 4-3 percent per annum. Travel and tourism represent approximately 11% of the worldwide GDP, according to the World Travel & Tourism Council. World Tourism Organization predicts one billion international arrivals in the year 2010 and has forecasted that by 2020, international tourist arrivals to Asia and Pacific region would experience over 400 percent growth from 105 million in 2000 to 438 million in 2020. As the world is being ushered into the information age, adoption of the information technology (IT) is rapidly increasing. Internet has transformed the world into a global village that can be navigated at the click of a mouse. It provides potential tourists with immediate access to textual and visual conformation on destinations throughout the world. The Internet has also become an essential tool in business to business (B2B) and business to consumer (B2C) transactions, the distribution of products, networking of business partners, and is an instantaneous means of accessing knowledge on all kinds of subjects including travel and tourism information. The Internet can be accessed through mobile telephones, cable-television, fixed telephones using traditional personal computers and laptops. Information is readily available 24/7 and the resulting cost transparency enables consumers to make more informed choices (Sinha, 2000).

This ease of access and depth of information has stimulated the emergence of a new breed of travel consumers who are independent and prefer to search for holidays themselves online, rather than through travel agents. And the majority of the people connected to the Internet happen to be from the world's top three tourism spending markets - Germany, USA and UK. The Internet is already the primary source of tourist destination information in these major markets. It has outpaced traditional sources of information on tourist destinations within the short period of its existence. Its audiovisual presentation of information on destinations outdoes the glossiest and most colorful print, and the quality of the presentation plays a decisive role in the end-consumer's choice of one destination over another. Internet also offers tourism destination and businesses the means to make information and booking facilities available to millions of consumers around the world at a relatively low cost, while at the same time enabling them to cut down drastically on amounts invested in the production and distribution of promotional materials. Travel and tourism are fast becoming the largest category of products sold on the Internet, which must therefore be seen as the new marketing battlefronts for tourism destinations in Asia-Pacific. Apart from the Internet, technological advances gave rise to other electronic distribution platforms such as interactive satellite television and mobile devices. The expected proliferation of satellite TV and m-commerce will gradually intensify competition among intermediaries who will have to reengineer their business processes and evolve new business

models in order to survive and remain competitive (Buhalis & Licata, 2002)
It is therefore, in the best interest of the Asia-Pacific region to keep abreast with time and step up its use of IT to satisfy the thirst for instantaneous tourism information on destinations. The stage is now set for national, regional, local tourist organizations, intermediaries, and administration and policy framing bodies in the Asia-Pacific region to rise to the challenge and understand, adopt and use the full potential of ICT to satisfy the thirst for instantaneous tourism information on destinations by not only marketing various tourism products and destinations to potential tourists, but also monitor and build a relationship with the tourists in the entire tourist life cycle.

Electronic commerce
Electronic commerce can be defined as a secure exchange of information, products and services via computer networks. It can be divided into the following categories

- business to business
- client to client
- business to client
- bussiness to government

Information and Communication Technology provides tools for direct communication with clients. This figure provides a presentation of the traditional value chains.

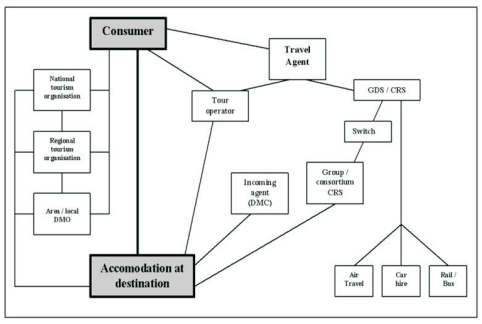

Figure 1 - Traditional value chains
Source: Associates of Tourism Enterprise and Management (TEAM)Notes: GDS - Global distribution system
CRS – Central reservation system
DMC – Destination Management Company
DMO – Destination Marketing Organisation
The situation is now changing, as the overall structure moves towards an Internet-based value net, as represented in Figure 2 .

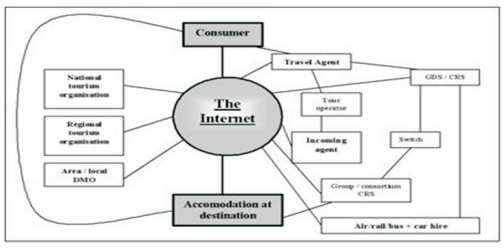

Figure 2 - Internet based value chains
Source: The role of Information And Communication Technology in tourism and related changes in skills: electronic commerce and revenue management
Direct selling to the customer has increased. There are many new intermediaries
such as Internet portals specialising in selling tourism products. Also the distribution channels traditionally used by tour operators or travel agencies are now available for customers via the Internet. Tourism professionals have the challenge of finding the right channel to the right customer segment.
Information and Communication Technology development has made customer relationship management more visible and efficient. Information and Communication Technology enables companies to interact with clients and continuously alter products and services in order to meet, and exceed, customer expectations.

Role of Information and Communication Technology in E-Tourism
Role of Information and Communication Technology in helping the tourism industry confronted to these changes in the economy react, we adopted a framework, illustrated as follows.

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1. Business: the other businesses making transactions with the business. This concept deals with business-to-business trade

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2. Client: the final client buying the products or the services of the business. This point mainly addresses the retail commerce
3. Relation: an enterprise can use Information and Communication Technologies to support and improve its cooperative relations when making transactions with its partners like supplier, customer, value-added provider, third-parties.
4. Market: a group of companies can use technologies to improve their global efficiency or competitiveness when reaching their markets.
5. Government: the public authorities which often are partners in the trade or commerce processes. This aspect mainly refers to the role of public authorities.

Reaching the customers
Firms communicate with their customers through various media. For several years, the Information and Communication Technologies have been deeply altering the traditional view of marketing, shopping and retailing media.
The computer-mediated environments such as the email, message and particularly the Internet allow another way of reaching consumers and online marketers plan to increase their online spending in order to be

1. Better at communicating with their customers,
2. More efficient in their selling relations with their customers, and

Information could be considered as an on-line place where a large number of online buyers and sellers can easily congregate and where commerce can be centered

The role of the government
In most countries, governments clearly play a significant role in electronic commerce and electronic markets as they did for previous infrastructure developments (such as railroad, aviation and highways). In its various roles as regulator, educator and promoter, government and public administrations can use Information and Communication Technology to establish the rules and the incentive structure that will help determine private sector choices
The public sector has many incentives to promote and sustain electronic market solutions for its own rationalization but also to help the enterprises leverage the best of these new technologies in the global information-based society. The public authorities can use Information and Communication Technology in order to a) widely dispatch information

collected and structured to help their local businesses reach new markets, and (b) create and sustain electronic platforms and markets.

Innovative applications of Information and Communication Technology

On the basis of the previous discussions, our goal in this section is to describe three innovative applications of Information and Communication Technology for the tourism industry. These applications target three large segments of the industry, corporate customers and business travel, individual customers and leisure travel, as well as groups of people traveling to congresses and exhibitions. They leverage extended enterprise technologies to improve the level of service offered to customers and the competitiveness of the actors selecting them. A business travel process management application for corporate customers.

Most companies around the world look critically at their business travel management processes. The goal is double, to use process redesign methodologies to streamline these processes and lower their cost on one side, and leverage technology, enforce policies and start collecting consolidated data on travel management in order to negotiate future discounts with suppliers on the other side .

We anticipate to shortly see integrated travel management applications emerge, leveraging workflow technologies and connections to open networks. The workflow system would be used internally to circulate travel requests and expense reports around the company, collecting the required authorizations and feeding automated statistics collecting systems. The system would allow for the general specification of the required trip i.e time, place and specific constraints. Connections to external partners would be used to send completed requests to a travel agency. Based on each traveler's profile and on the company's policy, the agency would then fill in the details specific place, rental car type and company, etc. and pass the actual reservations and orders. It is obvious that with the development of such automated systems, intermediaries such as travel agencies will find their added value increasingly harder to justify.

A travel mall for individual customers and leisure travel. A traveler who would decide to use the Internet today to help prepare a trip to some holiday location would find many sources of information. The World-Wide-Web is a support to multiple servers describing the offerings of countries, tourist regions and travel suppliers i.e. airlines, cruise lines, hotels, rental car companies, etc. Nevertheless, accessing this information requires knowledge to know where the servers are located, time to access each server independently and perseverance each server presents information in a different form, through different search mechanisms and with different levels of detail. It is often not possible to book travel directly on-line and certainly not possible to buy the separate parts of a trip through the same supplier e.g. airline and hotel.

The first way of browsing would allow the customer to specify his destination, the way he wants to go there e.g. by air maybe specifying a carrier, by car, etc, what he wants to do there hotel only, sports activities, local excursions, etc. The second way would have the customer to express general interests and some demographic information. In both cases, based on the provided information, the system would then propose various destinations with options and allow people to book their travel. One might envision a trip to be constituted of specific modules plane trip, rental car, stay at a hotel, sightseeing excursion, etc. which would be combined together. The system would make sure there is no discrepancy between the selected modules e.g. car rental at a different place than the arrival of the plane, missing hotel night, etc. It could also proactively propose modules, based on the ones already selected. The whole system should be customized for a specific customer. Based on a customer's profile, which is created from demographic information the customer enters, but also from his past purchases, the system gets to know the customer's preferences and to propose him suitable alternatives. For instance, some customers prefer non-smoking hotel rooms, travel with a limited budget, try to maximize their frequentflyers miles on a specific airline, etc.

The system should enforce these choices, wherever possible. At the same time, this knowledge represents an investment customers make with a particular intermediary, and as such allow this intermediary to build entry barriers for its competition, through higher switching costs for customers. This system is similar to what is currently known as a Computer Reservation System (CRS, now often called a Global Distribution System (GDS)). Nevertheless, the envisioned system should leverage new Information and Communication Technologys such as the Internet and open access systems, such as the World-Wide-Web. Therefore, they would gain maximum exposure and a broad user base. These systems should also offer added-value services to customers, such as information-based services. These services are often available today in one form or another but need to be standardized and integrated. The underlying architecture which need to be created to support these systems will require common formats for the data and common functions such as reserving, ordering, paying, etc. This will probably be achieved through industry standardization efforts, under the lead of a GDS or a consortium of travel agencies. Such systems are certainly a way for travel agencies targeted at leisure travelers to redefine their role in the upcoming information world, and regain leadership they're currently losing to GDS and direct travel suppliers sales.

In our opinion, the added value customers would gain from such services would be sufficient to have them switch from their current distribution habits, and come back again and again, even more so as these systems progressively learn about their habits and preferences. An integrated travel environment for congress organizers The last of our descriptions of the use of technology to improve travel distribution practices is targeted to the organizers of exhibitions and congresses. The context we use for our example is a conference with multiple breakout sessions running in parallel, and a large exhibition with various companies presenting their products. Planning to go to these events includes two components: buying travel products and planning the conference itself. We envision a travel mall modeled around the first system described. Any participant will find there descriptions of the different ways to join the congress city, the different accommodation available there and the various leisure activities possible. On-line presentation and ordering will be possible.

In addition to that, the various sessions the participant can attend will be listed, and the system will assist the customer in choosing the sessions which better match its interests. On top of that, a map of the exhibition will be available. Upon selection of the most interesting places to visit, the system will print out a customized map of the best route to see everybody in a minimum time. Such a system should help enhance the preparation of the trip and maximize the added value for the participant. It will also help the organizer

streamline its customer relation service, and help differentiate it from the competition. On a macro-economic level, it would reinforce the position of a city or a region on the global marketplace. As such, and following our introductory remarks, it could be an area where local government action would be favorable.

A profession, no less than a craft, is shaped by its tools. The profession of marketing, its theories, its practices, and even the basic sciences that it draws on are determined by the tools at its disposal at any moment. When the tools change, the discipline adjusts, sometimes quite profoundly and usually quite belatedly. The introduction of television advertising 50 years ago was just such a disruptive event and marketing theory and practice are still responding, evolving their understanding of how the tool works and how its effects should be measured. However, marketers working in the tourism sector need to be aware of electronic evolution. The speed of development of new distribution channels and the lack of a comprehensive source of information about the features of these systems means that the tourism industry is currently in a reactive rather than a proactive position. This paper represents a step forward in classifying the various types of inter-organisation systems typical of IT-enabled extended enterprises and suggests some visions for future offerings. In fact, there will be three critical success factors, which should be kept in mind while designing these systems:

1. integration: each of the systems should be as integrated as possible and should represent a "one-stop" shopping experience. This will require standardization among the different suppliers, in terms of data, functions and organisational procedures.
2. Customization: a travel mall should not simply be a list of possible travel products; it should take advantage of technology to map as closely as possible the interests of the customer. As such, it should track each customer's profile, and present only the most relevant information. Each customer's interaction with the system should be used to increase the relevance of the relation

n Pro-activity: instead of simply waiting for customers to "drop-in", these systems should strive to create travel needs. For instance, by presenting information on attractive sports, customers could be enticed to buy a sports travel package, or by making available information relevant to professionals, they would be attracted by conferences in similar fields. Electronic mail could also be used to regularly update customers on specific offers, close to their tastes or previous purchases

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